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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,562	10/07/2004	Klaus Kneller	12604/10	4036

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EXAMINER	
MCCLOUD, RENATA D	

ART UNIT	PAPER NUMBER
2837	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/510,562	KNELLER, KLAUS	
	Examiner	Art Unit	
	RENATA MCCLOUD	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *39 and 56* is/are allowed.

6)☒ Claim(s) *28-38,40-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 28-35,38, 40-43,48-55 rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeshita (US 5631813).

Claims 28,48,53: Ikeshita teaches in a first embodiment at least one supply module (1/5) providing an intermediate voltage; a drive circuit comprising at least one inverter (9) to drive at least one motor (3); a buffer (7) to store energy; a bus system (the lines connecting the circuit together). Ikeshita does not explicitly recite in the first embodiment, the buffer supplied with energy when the intermediate circuit voltage exceeds a first critical value and regenerative power of a first drive module exceeds the power of a second drive module to store the supplied energy, and supply the stored energy to at least one drive module when a motive power of the at least one drive module exceeds the regenerative power to power the corresponding motor. Ikeshita teaches in the background of the invention a circuit well known in the art comprising at least one supply module (1/5) providing an intermediate voltage; a drive circuit comprising at least one inverter (9) to drive at least one motor (3); a buffer (7) to store energy (col. 1:30-50,2:22-33); a bus system (the lines connecting the circuit together) the buffer (7) supplied with energy when the intermediate circuit voltage exceeds a first critical value and regenerative power of a first drive module exceeds the power of a second drive module, and feeds back energy to at least one drive module when a motive power of the at least one drive module exceeds the regenerative power to power the corresponding motor (col. 2:34-3:32; 4:13-32). It

would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Ikeshita et al to operate as taught by the background of the invention in order to control and brake the motor(s).

Claims 29, 49: the motor includes one of a synchronous and an asynchronous motor (col. 2:16-21, induction motor).

Claim 30: the buffer (7) is supplied with energy for periods of time and releases the energy to the driver (9; col. 2:22-33).

Claim 31: the buffer (7) is supplied with energy during regenerative operation of the driver and releases the energy to the driver (9; col. 2:45-57).

Claims 32 and 33: the supply module (1/5) includes a rectifier (5).

Claims 34, 35: the supply module (1/5) includes a feedback unit (col. 2:45-57)

Claim 38: the buffer module includes a capacitor (7) having a capacitance greater than a sum of capacitance of all other capacitors to which the intermediate circuit voltage is applied (there are no other capacitors, so the sum would be 0).

Claim 40: the buffer (7) is connected to an output of the supply module (1/5), the buffer including a capacitor (7) having a charging current influencable by a circuit breaker (8).

Claim 41: a buffer including an electrolytic capacitor (7).

Claim 42: Ikeshita teaches the limitations of claim 28. Referring to claim 42, Ikeshita does not explicitly recite that the buffer (7) and supply module (1/5) are in separate housings. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use separate housing since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. (see MPEP 2144.04 (5)(C)). Also a method of forming the device is not germane to the issue of patentability of the device itself. Therefore the limitation “manufactured separately” has not been given patentable weight.

Claim 43: Ikeshita teaches the limitations of claim 28, Referring to claim 43 Ikeshita does not explicitly teach the buffer (7) and supply module (1/5) are integrated and arranged in a single housing. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the buffer and supply modules integrated since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art (see MPEP 2144.04(5)(B))

Claim 50: the buffer (7), driver (9), and supply module (1/5) are connected through to a bus (lines connecting the circuit together).

Claim 51: another module (18) connected to the bus system.

Claim 52: the buffer, driver, and supply modules are in the same interface (Fig. 1).

Claims 54,55: Ikeshita teaches the limitations of claim 53, referring to claims 54, 55 Ikeshita teaches when the intermediate circuit voltage exceeds a critical value flowing current through a braking resistor to dissipate energy when a regenerative power of a first drive module exceed the power of a second drive module ((col. 2:34-63). The do not teach a second critical value. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Ikeshita to have plural critical values since it has been held that mere duplication involves only routine skill in the art (see MPEP 2144.04 (VI))

3. Claims 36,37, 44-47 rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeshita (US 5631813) in view of Takagi et al (US 6367273)

Claim 36, 44: Ikeshita teaches the limitations of claims 28, 43. Referring to claims 36, 44, Ikeshita teaches the buffer/supply module includes a switch (8) to allow passage of and block current induced by the intermediate circuit voltage (col.1:30-39, 2:23-33). They do not

teach an electronic circuit breaker. Takagi et al teach a buffer/supply module having an electronic circuit breaker (27) allowing passing and blocking of current (col. 6:15-42). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Ikeshita to have an electronic circuit breaker as taught by Takagi et al in order to control the current to the motor.

Claim 37,45,46: Ikeshita and Takagi et al teach the limitations of claims 36, 44. Referring to claims 37, 45, 46, Ikeshita teaches a switch (8) is connected to an intermediate voltage/current measuring device (71). Ikeshita does not teach a driver for the breaker. Takagi et al teach a circuit breaker (27) having a driver (205), the breaker connected to a device (28) measuring an intermediate current (col. 39-42).

Claim 47: Ikeshita teaches the limitations of claim 28. Referring to claim 47, Ikeshita teaches the buffer includes a switch (8) and a circuit connected to a device measuring voltage (22), the switch influencing current supply to a breaking resistor (6). Ikeshita does not teach the buffer includes an electronic circuit breaker and drive circuit connected to a voltage measuring circuit the circuit breaker configured to influence supply to a braking resistor. Takagi et al teach the buffer (5) includes a circuit breaker (27) and drive circuit (205) connected to a voltage measuring circuit (50) the circuit breaker (27) configured to influence supply to a braking resistor (111). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Ikeshita to include the circuit taught by Takagi et al an order to control the breaking of the motor.

Allowable Subject Matter

4. Claims 39 and 56 are allowed.

Response to Arguments

5. Applicant's arguments filed 2/12/08 have been fully considered but they are not persuasive. In response to applicant's argument that Ikeshita does not teach the smoothing electrolytic capacitor is configured to be supplied with energy for periods of time when an intermediate circuit voltage exceeds a first value and an overall regenerative power of a first drive module exceeds a motive power of a second drive module to store supplied energy and supply the stored energy to at least one drive module when a total motive of at least one drive module exceeds the regenerative power to power the corresponding motor, the examiner respectfully disagrees. Regeneration is when excess energy from one system is stored and fed back to another system. Ikeshita teaches that excess power from one system charges the capacitor (as in the capacitor stores the excess energy) and the excess energy is fed back to the second system during regeneration (see col. 2:21-64). There is nothing in applicant's claim language that precludes the examiner from reading Ikeshita from meeting the claimed limitations

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RENATA MCCLOUD whose telephone number is (571)272-2069. The examiner can normally be reached on Mon.- Fri. from 5:30 am - 2pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Renata McCloud/
Primary Examiner, Art Unit 2837

/R. M./
Primary Examiner, Art Unit 2837

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/510,562	KNELLER, KLAUS	
	Examiner	Art Unit	
	RENATA MCCLOUD	2837	